Nausea associated with migraines

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Learning objectives:

- Recognise the signs and symptoms of migraines
- Discuss the use of anti-emetic medicines for acute migraines in adults
- Counsel patients on the use of anti-emetic medicines for migraine.

Competency standards: 7.1, 7.2, 7.3.

Migraines

Migraines are particularly common in young adults, with the prevalence reducing after the late 40s and early 50s years of age.[1,2] Migraines are headaches that can have a throbbing or pulsating feeling, and often occur with nausea, vomiting, and sensitivity to light and sound. These headaches can last between a few hours to three days.[1,3] They place a significant burden of disease on quality of life, and have a socio-economic impact through loss of productiveness and sick days.[4] Most people report experiencing at least one migraine attack each month, with many reporting that migraine attacks interfered with their daily activities.[2] Migraines have been ranked as the third most prevalent and seventh highest specific cause of disability around the world.[4]

In people who experience migraines, their brains are hyper-excitable to a range of stimuli. This means it is easier to trigger neuronal excitability in these people, which is thought to be responsible for starting migraines.[2] Migraines are thought to be caused by inflammation of the trigeminal neurons that is mediated by the nervous system, which changes the brain's processing of pain signals. Hence, activation of the trigeminal neurons cause dilation of the blood vessels and a cascade of effects that act to sensitise the nerve fibres, leading to normal pulsations of the blood vessels being interpreted as painful. This is thought to account for the pulsating and throbbing nature of the migraine headache.[2]

Clinical features and diagnosis

Diagnosis of migraines is through examining the patient's medical history to determine if the International Classification of Headache Disorders (ICHD)-II criteria for migraines are met. Migraines can be classified as mild, moderate, or severe depending on the impact of the migraine on daily life. People experiencing mild migraines can continue with normal activity, but this is impossible in severe migraines and bed rest may be required.[2]

The common signs and symptoms used to help with the diagnosis of migraines are[2]:-

- presence of risk factors (e.g. family history, childhood motion sickness, caffeine intake, drop in air pressure)
- prolonged headache
- nausea
- reduced ability to function

- light sensitivity.

Other less common factors that may be used as a diagnostic factor include sensitivity to noise, aura, vomiting, and having a unilateral or throbbing headache.[2]

The migraine aura is characteristic of migraines and can occur during or before the onset of the headache. It is a group of reversible visual, sensory or speech symptoms, but only 15–30% of people experience it.[1,2] Migraine aura can include positive symptoms (flashing lights, visual sparkles), or negative symptoms (e.g. numbness, vision loss, partial change or diminished vision surrounded by a field of normal vision).[1,2]

A simple screening tool used to help identify migraines in people that have had a headache in the last 3 months include asking 1) if the headache limited their activities for a day or more in the last 3 months, 2) if they felt nauseous or sick when they had the headache, and 3) if the light bothered them when they had a headache. The majority of people (93/100) answering 'yes' to two of the questions did have migraines.[2]

Other common headaches people may experience are a tension headache, or a cluster headache. There are no differentiating tests for these types of headaches, but there are some distinguishing factors between the headaches that may help with their classification.

Tension headaches: These are the most common type of headaches. Tension headaches can be episodic or chronic, and are typically described as having a 'tight band' around the head with non-throbbing pain. Tension headaches usually are not disabling and so it is common for patients to self-manage, and medical advice is not usually required unless the headaches are severe and frequent. Phobia to light and sound is rare, and if both symptoms are present then it is indicative of a migraine.[2,5]

Cluster headaches: These headaches are very rare and extremely painful. The pain is usually located around one eye, together with autonomic symptoms such as dropping eyelid, nasal stuffiness, eyelid and facial swelling. The attacks can last anywhere from 15 minutes and up to 3 hours, and can occur from once every other day, to up to eight times a day with intervals of headache-free periods between the attacks.[6] The shorter duration of headaches, together with several attacks each day, is usually indicative of a cluster headache rather than a migraine.[2,6]

Physical examinations such as MRI imaging, laboratory tests and serologies, and lumbar punctures may be required to help rule out more serious and problematic causes of headaches e.g. intracranial or subarachnoid haemorrhage, ruptured aneurysms, encephalitis, arterial dissection, cerebral venous thrombosis.[2]

Management of migraines

Management of migraines is centred around preventing the migraines, or pain relief to help stop an acute migraine attack once the symptoms have started.[1] Management of migraines for children is similar to that of adults, but there are less pharmacological options approved for use in children.[7] The pharmacological management options for acute migraine attacks will be discussed further.

Pharmacological management options

First-line treatment for acute migraines is analgesics and antiemetic medications. Many of these first-line medicines are readily available over-the-counter as Pharmacy Only or Pharmacist Only Medications. Where the first-line simple analgesics are ineffective or the attack is severe, then second-line treatment involves the use of triptans at the onset of the migraine.[2,7,8]

Analgesics

Non-steroidal anti-inflammatory drugs (NSAIDs) e.g. naproxen, ibuprofen, or aspirin is often the preferred first-line analgesic for managing migraines, particularly when the headache is mild. Paracetamol alone is found to be more effective than a placebo, but appears to be less effective than the NSAIDs or aspirin.[2,7] Many patients may request opioids e.g. codeine in combination with paracetamol or NSAID or aspirin to help with relieving the migraine. However, opioids are generally not recommended as there is little evidence supporting their effectiveness for migraines. Opioids can cause nausea and gastrointestinal upsets, dependence, and medication overuse headaches.[7,8]

Analgesics should be administered as soon as possible after the onset of the migraine and it is important that an adequate dose of the analgesic is taken. Soluble formulations are often preferred as drug absorption can be impaired in people with migraines.[8]

Suggested counselling points: Patients should be counselled on the maximum recommended dosages for NSAIDs, aspirin, paracetamol, and directions for their use; and patients may prefer soluble formulations if available. Opioids such as codeine are not recommended for migraines as they can cause medication overused headaches.[7,8]

Anti-emetics

Anti-emetics should be considered for patients that experience nausea and vomiting with their migraines.[2] Pharmacological therapy for migraines needs to be administered as soon as possible after the attack, because as the migraine progresses, gastrointestinal motility is reduced and nausea develops. This can lead to erratic absorption of orally administered drugs, or the dose may be vomited.[7,8] Also, nausea and vomiting can cause a delay in administration of medicines to manage the migraine, causing treatment failure.[8]

Anti-emetic medications should be used at the start of the attack, then regularly every 6-8 hours if required.[7] They are effective for reducing nausea and vomiting, and increase gastrointestinal motility, which may help with improving the absorption of the orally administered analgesics.[7,8] Some antiemetic agents are available over-the-counter as a single ingredient product (e.g. prochlorperazine 5 mg; *Nausetil*); or as a combination product with an analgesic (e.g. paracetamol 500 mg, metoclopramide hydrochloride 5 mg; *Anagraine*), which may be convenient for patients.[9]

If nausea and vomiting is pronounced and persistent, then admission to hospital for intravenous fluids and medications may be required.[7,8]

Suggested counselling points: Patients should be encouraged to take the anti-emetic medication as soon as possible at the onset of the symptoms.

Triptans ($5HT_{1B/1D}$-agonists)

Triptans (e.g. sumatriptan, naratriptan), can start to relieve headaches within an hour of oral administration, and also appear effective for improving other symptoms associated with the

migraines e.g. nausea, vomiting, phobia to light and noise.[7] This class of medicines are considered well tolerated and safe, but they are not effective for approximately one-third of people. The triptans also appear to have different efficacies, so individuals are likely to show a preference for a particular one.[7,8]

Non-pharmacological management options

While the exact mechanism of migraines is not well understood, what is known is that there are common triggers that can cause migraines (e.g. hormonal changes in women, foods or skipping meals), food additives, alcohol, stress, changes to sleep patterns).[1] Lifestyle modifications to avoid or minimise exposure to these triggers (e.g. reducing stress and getting enough sleep) may be helpful. A diary documenting the headaches (e.g. onset, duration, medications taken, and food consumed in the preceding 24 hours) can be helpful for identifying triggers for the migraines.[1]

Referrals

Referral to the doctor is required if there is a change in the pattern of headaches for people who have a history of headaches, or if the headaches feel different.[1]

Referral for immediate medical attention from a doctor or the emergency department is required if either of the following is experienced:

- A severe and/or abrupt headache, often described like a thunderclap.[1,3]
- Headache with fever, stiff neck, confusion, seizures, weakness, double vision, numbness or difficulty speaking.[1]
- Headache after a recent head injury (1–3 months), especially if the headache gets worse.[1,3]
- Chronic headache that is worse after coughing, exertion, straining, or sudden movement.[1]
- New or severe headache pain above the age of 50 years.[1,3]
- Headache symptoms getting progressively worse over time, and headaches that do not respond to adequate doses of pain relievers.[3]

Key learning points

- Migraines are common, and people may present at a pharmacy seeking medicines to help relieve their symptoms.
- Many of the first-line medicines for the management of migraines are readily available over-the-counter as Pharmacy Only or Pharmacist Only Medications.
- Pharmacological treatment should be administered as soon as possible, as reduced gastrointestinal motility and nausea associated with migraines can lead to erratic absorption of orally administered medicines, or the dose may be vomited.
- Management of nausea and vomiting with migraines is important as it can delay patients administering their oral migraine medicine, which can lead to treatment failure.

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